

USPTO Serial No. 09/902,883

Meichun Ruan et al.

Response to Office Action mailed January 25, 2005

REMARKS

The Office Action objects to claim 5 because of certain informalities. Claim 5 has been canceled and the objection is considered moot.

The Office Action rejects claims 1, 2, 8, 12, 14-16, and 19 under 35 U.S.C. 102(e) as being anticipated by Athale. Claim 1, as amended, recites an optical switching system for directing the path of optical signals comprising a substrate including a plurality of channels. Each channel has an optical transmission path between an optical input and an optical output. The optical transmission path is enclosed by a wall. A reflecting structure is formed within the wall of the channel as the optical input to the channel. The reflecting structure has a first position parallel to the wall of the channel to form a portion of the enclosure the optical transmission path. The reflecting structure is cantilevered to rotate outward away from the channel to a second position. The cantilever operation is controlled by an electrical signal to move the reflecting structure to the first position or second position. The reflecting structure is latched in place by a magnetic force upon removal of the electrical signal. An optical path provides an optical signal incident to the reflecting structure which when rotated outward away from the channel provides an entrance for optical signal into the channel.

The Athale reference does not teach or suggest a reflecting structure formed within the wall of the channel as the optical input to the channel and cantilevered to rotate outward away from the channel. The mirrors disclosed in Athale rotate inward into the channel. In claim 1, by rotating the reflecting

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structure outward away from the channel, the reflecting structure provides an entrance for the optical signal into the channel from external sources.

The Athale reference also does not teach or suggest that the cantilever operation is controlled by an electrical signal to move the reflecting structure to the first position or second position, and that the reflecting structure is latched in place by a magnetic force upon removal of the electrical signal. Athale has no such features.

Claim 1 as amended is believed to patentably distinguish over the Athale reference. Claims 2-4 and 7-9 are believed to be in condition for allowance as each is dependent from an allowable base claim.

With respect to claim 14, the claim as amended recites a method of directing optical signals through an optical switching system, comprising forming a plurality of channels through a substrate, wherein each channel includes an optical transmission path between an optical input and an optical output, the optical transmission path being enclosed by a wall, forming a reflecting structure within the wall of the channel as the optical input to the channel, wherein the reflecting structure has a first position parallel to the wall of the channel to form a portion of the enclosure the optical transmission path, the reflecting structure being cantilevered to rotate outward away from the channel to a second position, the cantilever operation being controlled by an electrical signal to move the reflecting structure to the first position or second position, the reflecting structure being latched in place by a magnetic force upon removal of the electrical signal, and providing an optical signal incident to the reflecting structure which when rotated

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outward away from the channel provides an entrance for the optical signal into the channel.

The Athale reference does not teach or suggest forming a reflecting structure within the wall of the channel as the optical input to the channel and cantilevered to rotate outward away from the channel. The Athale reference further does not disclose that the cantilever operation is controlled by an electrical signal to move the reflecting structure to the first position or second position, and that the reflecting structure is latched in place by a magnetic force upon removal of the electrical signal.

Claim 14 as amended is believed to patentably distinguish over the Athale reference. Claims 15-18 are believed to be in condition for allowance as each is dependent from an allowable base claim.

Claim 19 is canceled which renders its 102 rejection moot.

The Office Action rejects claims 3-7, 9-11, 13, 17, 18, and 20-24 under 35 U.S.C. 103 as being unpatentable over Athale in view of Judy.

Claims 3-4, 7, 9, 17 and 18 are believed to be in condition for allowance as each is dependent from an allowable base claim. Claims 5-6, 10-11, 13, and 20-24 have been canceled which renders the rejection moot.

Applicants have added new claims 25-33. New claim 25 recites an optical switching system for directing the path of optical signals, comprising a substrate including a plurality of channels. Each channel has an optical transmission path between an optical input and an optical output. The optical transmission path being enclosed by a wall. A mirror is formed within the wall of the channel as the optical input to the

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channel. The mirror is cantilevered to rotate outward away from the channel. The cantilever operation is controlled by an electrical signal to move the reflecting structure to the first position or second position. The reflecting structure is latched in place by a magnetic force upon removal of the electrical signal. An optical path provides an optical signal incident to the mirror which when rotated outward away from the channel provides an entrance for the optical signal into the channel.

The prior art of record does not teach or suggest a mirror formed within the wall of the channel as the optical input to the channel and cantilevered to rotate outward away from the channel. The prior art of record further does not disclose that the cantilever operation is controlled by an electrical signal to move the reflecting structure to the first position or second position, and that the reflecting structure is latched in place by a magnetic force upon removal of the electrical signal.

New claim 30 recites an optical transmission system comprising a substrate including a channel for propagating an optical signal along an optical transmission path enclosed by a wall. A cantilevered reflecting structure is formed within the wall of the channel as the optical input to the channel. The cantilevered reflecting structure rotates outward away from the channel to receive the optical signal.

The prior art of record does not teach or suggest a cantilevered reflecting structure formed within the wall of the channel as the optical input to the channel such that the cantilevered reflecting structure rotates outward away from the channel to receive the optical signal.

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Accordingly, new claims 25-33 are believed to patentably distinguish over the prior art of record.

Applicants believe that all information and requirements for the application have been provided to the USPTO. If there are matters that can be discussed by telephone to further the prosecution of the Application, Applicants invite the Examiner to call the undersigned attorney at the Examiner's convenience.

The Commissioner is hereby authorized to charge any fees due with this Response to U.S. PTO Account No. 17-0055.

Respectfully submitted,
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June 27, 2005

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